



ASML

ASML & Farmout

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ASML Confidential

ASML & Farmout presentation overview

- Definitions of OEM Outsourcing and Farmout
- Strategic considerations Internal Devt vs Farmout
- Internal/External Design decision criteria
- Characteristics of development farmout opportunities
- Criteria for successful Farmout projects
- Current practices, issues with Devt farmout
- ASML Policy wrt OEM outsourcing and Devt Farmout

ASML definitions OEM Outsourcing & Farmout

- OEM Outsourcing: Module development & delivery by a first tier supplier (**preferred model**)
 - Qualified functionality (of the module) is delivered to ASML
 - Product ownership: supplier
 - Delivery & Service model: to be agreed
- Farmout: Outsourcing of a development activity (**non preferred model**)
 - Development partner delivers TPD to ASML
 - Development partner delivers TPD to ASML supplier

Internal/ external design decision criteria

Internal

- Retention and build up of core competencies (specific ASML domain knowledge, long term need)
- Internal flexibility/ key knowledge transfer (cross sector mobility) (e.g to manufacturing, supply chain, customer support)
- Financial (no profit mark up or flexibility premium of third party in salary cost)

External

- Flexibility in terms of quality (specific competencies: external expertise level higher or faster accessible)
- Flexibility in terms of quantity (varying demand, varying R&D budget)
- Financial (activities with better price performance ratio external)

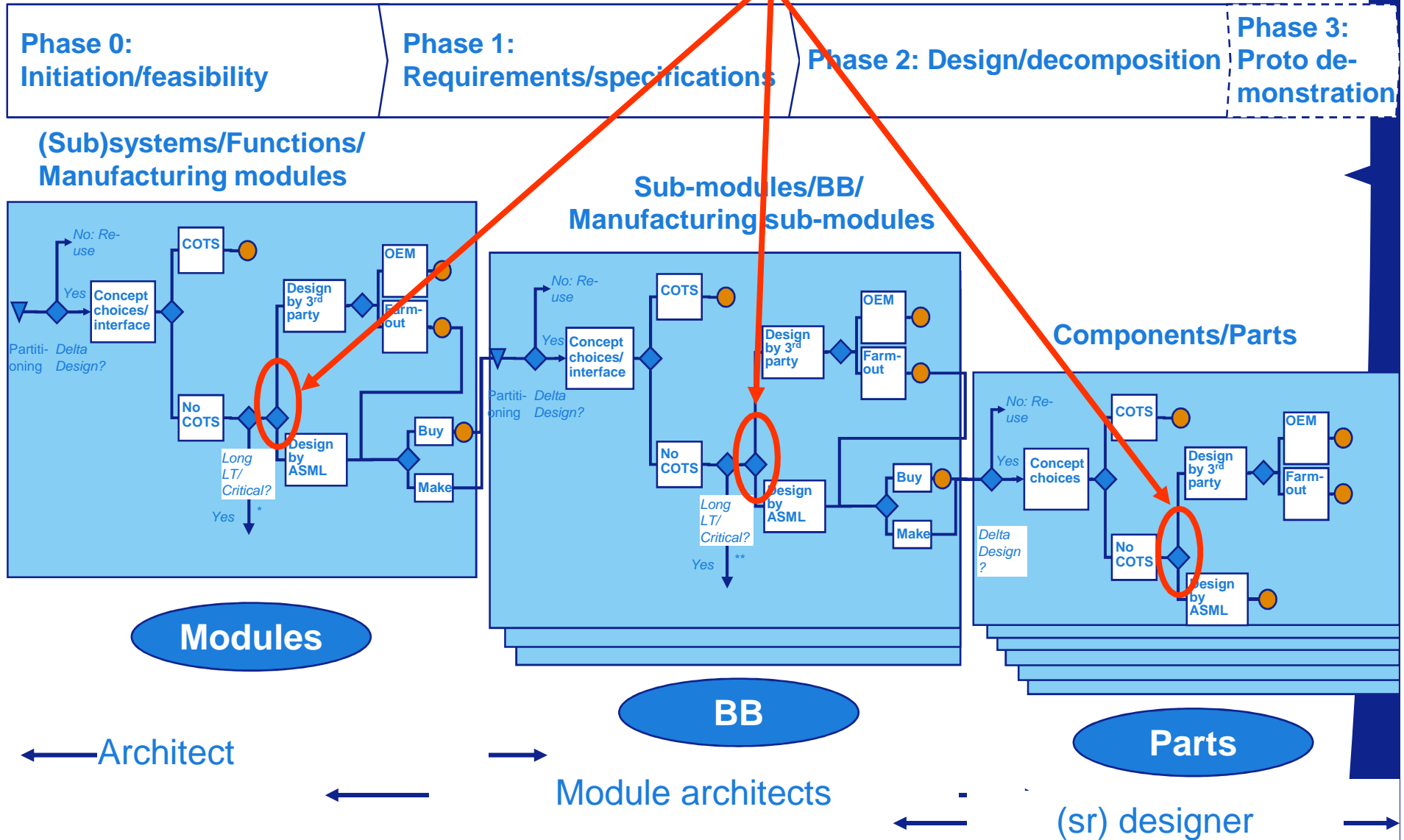
Internal/External Design decision criteria

- Focus on core activities
 - High customer value/impact modules
 - Technologies that we do better/ unique capability based
- Use the best available knowledge (respect the knowledge of others)
- Reduce number of interfaces/parties
- Increase involvement, ownership of suppliers

Systematic approach to system-split and Design/Make/Buy

Design internal/external decision

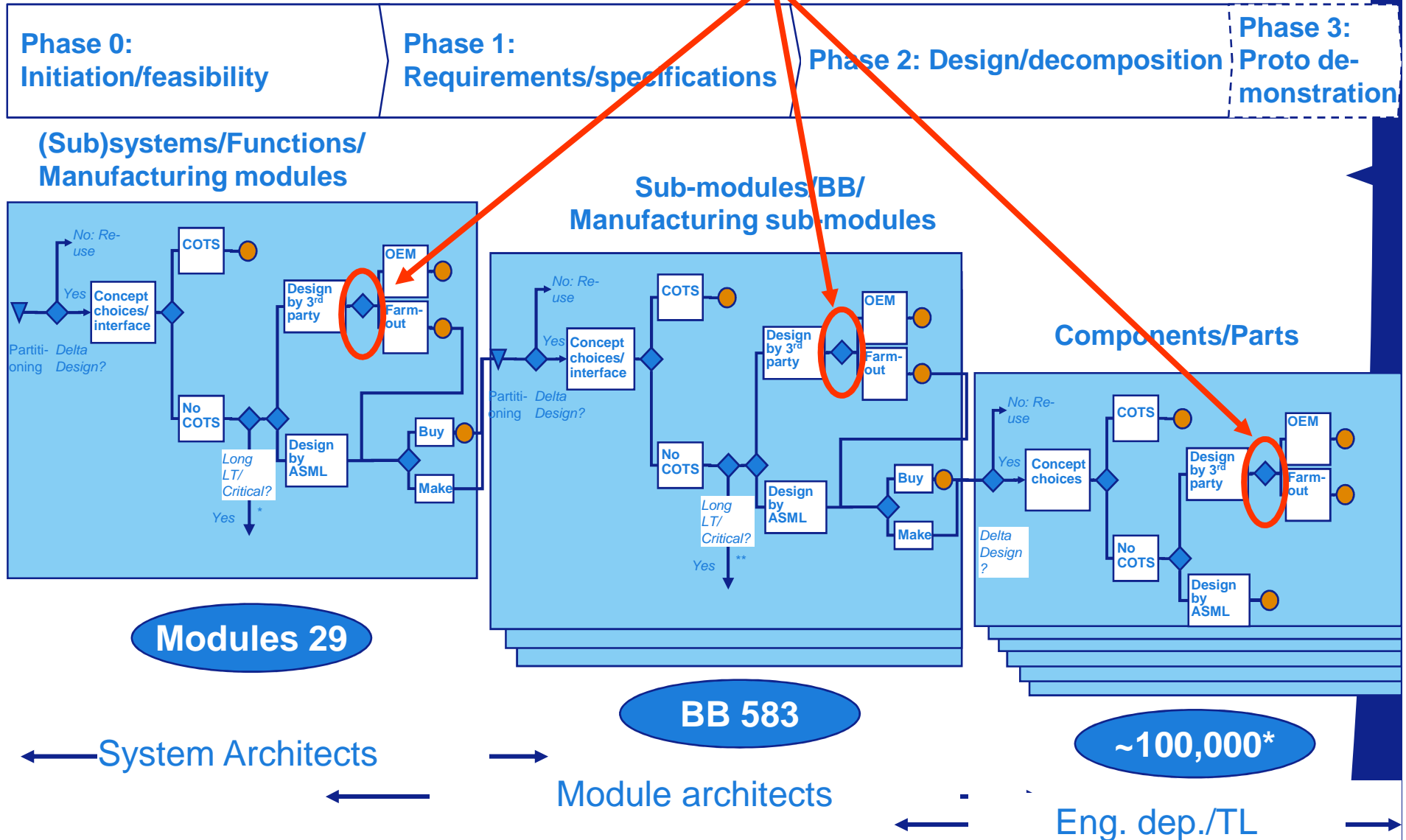
- People involved
- Supplier/partner selection
- ◆ Decision point
- ▼ Partitioning



Systematic approach to system-split and Design/Make/Buy

If external: OEM supplier or farm out

- People involved
- Supplier/partner selection
- ◆ Decision point
- ▼ Partitioning



External Design by OEM supplier or Farm Out

OEM supplier (preferred)

- Leverage technology and manufacturing know how, CoG quality focus
- Integral responsibility throughout the life cycle of the modules, building block or part
- Risk and opportunity sharing

Farm out of Design activity (not preferred)

- Required specific competencies: external expertise level not available at OEM supplier
- Required capabilities in terms of quantity not available at OEM supplier (varying demand)
- IPR
- Financial (activities with better price performance ratio external)

Characteristics OEM opportunity

- Modules, functions that can be specified sufficiently (interfaces, performance) such that an outside company can:
 - Understand and interpret specs correctly
 - Develop the unit to comply with specs
 - **Qualify the unit**
 - **Deliver the unit(s) in line with volume requirements ASML**
- Design and supply is (preferably) done by one company, or a combination of companies (that act as one to ASML)
- **Based on supply agreement**

Characteristics Devt Farmout opportunity

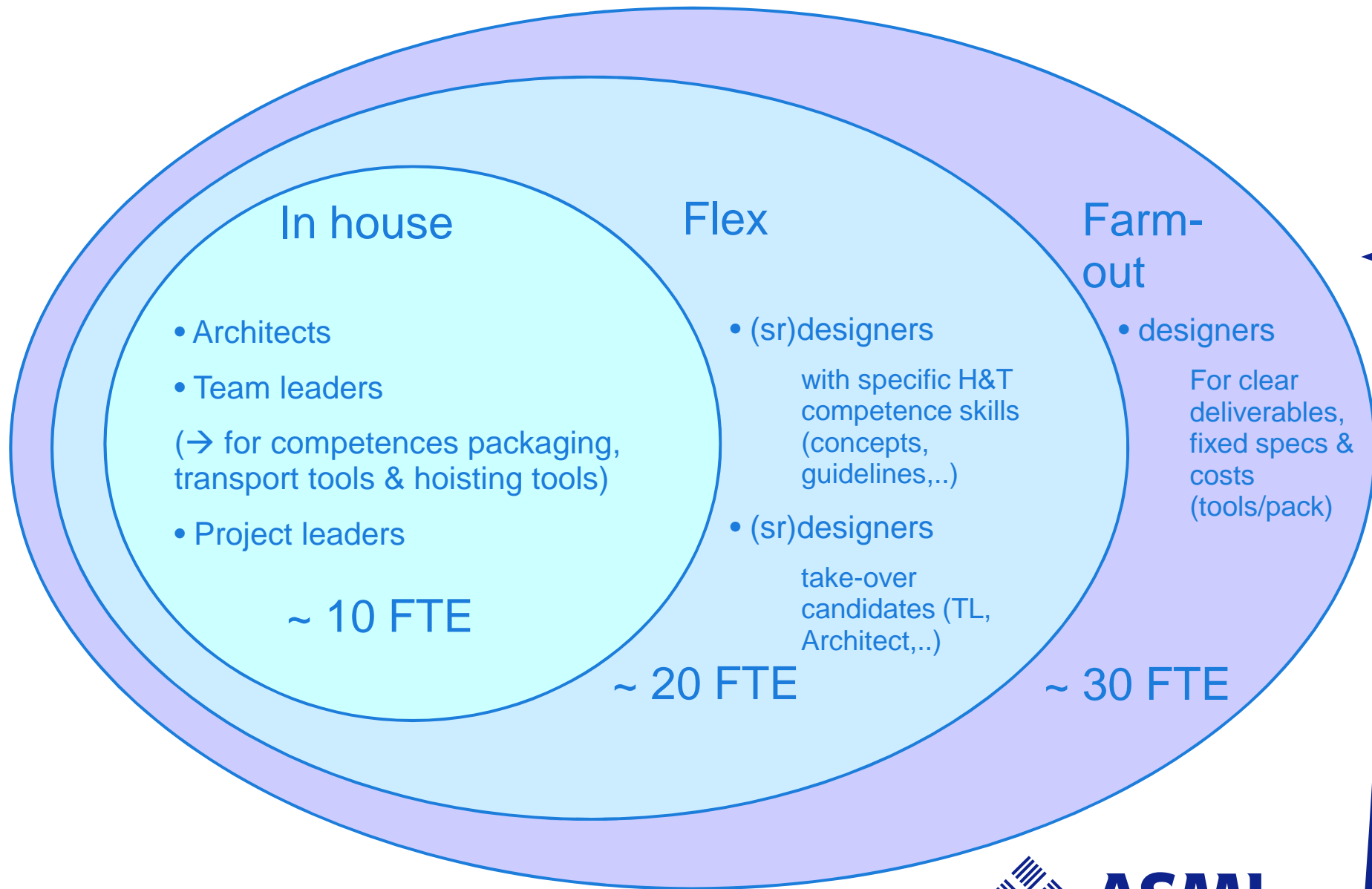
- Modules, functions that can be specified sufficiently (interfaces, performance) such that an outside company can:
 - Understand and interpret specs correctly
 - Develop the unit to comply with specs
 - Deliver the TPD (to ASML or to Build to print (+) supplier
- Design and supply is done by a development company
- **In line with ASML WoW and design rules (ISAS)**
- **Based on a statement of work**

Criteria for Development Farmout success

- Limited # of Clear interfaces (of the unit to be developed)
- Reviewed A4 spec/EPS, end of project: TAR, EC in SAP
- EPS not change sensitive (not impacted by changes in other modules)

- Lead engineer/Architect @ASML & @ Farmout partner
- Project manager @ASML & @ Farmout partner
- WoW embedded @ Farmout (connected to WoW-ASML)
- Fast Data line, TCE, UG etc.
- Competences @ Farmout partner (Depending on subject)
- Continuity @ Farmout partner
- Fast administrative processes
- Clear statement of work
- Clear interfaces with supply chain and managed by ASML and/or Farmout partner

Example current practice: ASML MDev H&T group



H&T: Farm-out in practice

In general all H&T tools and packaging designs are as baseline farm-out developments

- Fixed specs & price
- Statement of Work (communication, change management,..)

Farm-out development is effective for:

- Projects with clear scope
- Design capability of co-developer matches this scope
- Co-developer with sufficient project management skills
- Minimum on interfaces with other projects

Personal note:

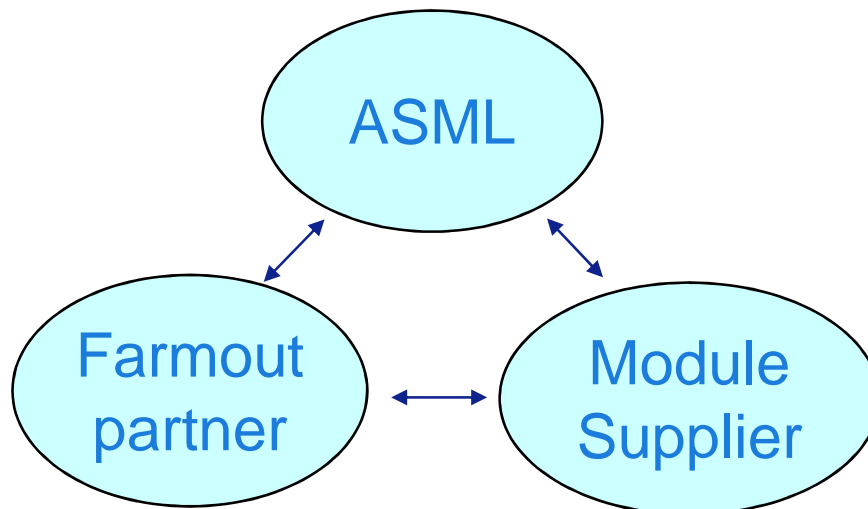
It is preferred that complete development from EPS to release for volume is covered.

- to secure maximum ownership and requirement acceptance.

For EPS (based on A4 specs) + possible feasibility PIR, a fixed quotation can be made. After agreement on EPS a fixed quotation can be made for next Milestones.

Issues with Devt Farmout

- ASML – Farmout – Supplier relation
- Module Ownership and responsibility for quality of delivered unit
- ASML Design reviews vs ASML design take over



The Learnings so far

- Many engineering service providers want to grow from flex labor providers to Farmout partners
- Do not underestimate effort/criteria for success
 - ASML TPD, WoW, Standards
 - Differentiating competences
 - Flexibility requirements
- Different business model, risk profile (from hourly rate to fixed price TPD)
- ASML prefers OEM supplier outsourcing, stimulates a transition from devpt Farmout to OEM supplier constructions
- All parties involved need to adapt
 - Communication patterns
 - Commercial agreements/business model
 - Competence mngt

ASML & Farmout, final words....

- A long and challenging journey
- Challenging journeys can be fun and rewarding
- If you prepare well
 - Knowledge
 - Gear
 - Relations with your companions on the journey